

# INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP2004/008957

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 B01J23/89 C07C5/32 C10G45/00

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 B01J C07C C10G

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 3 212 255 A (PUTT JOHN W ET AL) 19 October 1965 (1965-10-19) column 1, line 66 - line 68 column 2, line 22 - line 26; claim 1 -----	1,8
X	WO 01/68571 A (GRIFFITHS DAVID CHARLES ; BP CHEM INT LTD (GB); BINMORE GAVIN THOMAS ( ) 20 September 2001 (2001-09-20) page 6, line 10 - line 31; claims 1,2,9 -----	1,2,8
X	GB 2 353 734 A (INST FRANCAIS DU PETROL) 7 March 2001 (2001-03-07) page 4, line 11 - line 16; claims 1,22,28-30 -----	1,2,6,8
X	DE 25 38 098 A (BRINCKMANN HARBURGER OEL) 10 March 1977 (1977-03-10) page 8, paragraph 3; tables 1,3 ----- -/-	1,6,8



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

### \* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

26 October 2004

Date of mailing of the international search report

09. 02. 2005

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 152 975 A (ELLIOTT DOUGLAS C ET AL) 28 November 2000 (2000-11-28) column 4, line 12 - line 18; claims 1,2,4 -----	1,6,8
X	GB 1 160 872 A (VARTA AKTIENGESELLSCHAFT) 6 August 1969 (1969-08-06) page 2, line 20 - page 3, line 86; claims 1,4,5,7 -----	1,2,6,8

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/EP2004/008957

### Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

### Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1,2,8

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1,2,8

dehydrogenation process

1.1. claim: 6

hydrogenation process

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2. claim: 3

S02 oxidation

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3. claim: 4

NO reduction with CO

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4. claim: 5

CO methanisation

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5. claim: 7

ethane hydrogenolysis

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# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP2004/008957

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 3212255	A	19-10-1965	NONE	
WO 0168571	A	20-09-2001	AU 3393801 A BR 0109274 A CA 2401859 A1 CN 1418181 T EP 1263699 A1 WO 0168571 A1 JP 2003527362 T NO 20024400 A ZA 200206811 A TW 588030 B	24-09-2001 17-12-2002 20-09-2001 14-05-2003 11-12-2002 20-09-2001 16-09-2003 13-09-2002 03-07-2003 21-05-2004
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GB 1160872	A	06-08-1969	AT 276310 B BE 687964 A CH 497920 A DE 1542552 B1 DE 1542556 A1 DE 1546730 B1 FR 1509966 A NL 6614162 A US 3573038 A	25-11-1969 16-03-1967 31-10-1970 18-06-1970 08-10-1970 06-05-1970 19-01-1968 10-04-1967 30-03-1971